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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/762,325	01/23/2004	Robert Arthur Giddings	RD-27,791-3	4964
6147 7590 05/23/2007 GENERAL ELECTRIC COMPANY GLOBAL RESEARCH PATENT DOCKET RM. BLDG. K1-4A59 NISKAYUNA, NY 12309			EXAMINER HOFFMANN, JOHN M	
			ART UNIT 1731	PAPER NUMBER
			MAIL DATE 05/23/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

6

Office Action Summary	Application No. 10/762,325	Applicant(s) GIDDINGS ET AL.	
	Examiner John Hoffmann	Art Unit 1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-18 is/are pending in the application.
- 4a) Of the above claim(s) 17 and 18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 8/24/04, 1/23/04 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election of Group I, claims 10-16 in the reply filed on 4-4-07 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 17-18 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on April 4 2007.

Information Disclosure Statement

The information disclosure statement filed 1-23-2004 fails to comply with 37 CFR 1.98(a)(1), which requires the following: (1) a list of all patents, publications, applications, or other information submitted for consideration by the Office; (2) U.S. patents and U.S. patent application publications listed in a section separately from citations of other documents; (3) the application number of the application in which the information disclosure statement is being submitted on each page of the list; (4) a column that provides a blank space next to each document to be considered, for the examiner's initials; and (5) a heading that clearly indicates that the list is an information disclosure statement.

Whereas two lists were filed at least items (3) or (4) (see above) were not fulfilled.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the barrier (claim 12) and the lining (claim 10), and the "walls" of various claims must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. See also claim 15.

The drawings are objected to under 37 CFR 1.83(a) because they fail to show the barrier as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New

Art Unit: 1731

Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 10-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase "drawing zone" is indefinite as to its meaning. Page 5, line 14 describes portion 28 as the drawing zone. Examiner sees no drawing occurring at 28, rather drawing occurs below this portion. It is unclear what is required by a drawing zone. It is also unclear if "and a drawing zone" requires that the lining, the wall, the melting zone, the body or the furnace has the drawing zone.

Claim 11: there is confusing antecedent basis for "walls" – it is unclear if this means that there must be at least two walls in addition to the wall of claim 10. There is no antecedent basis for "the refractory material" – it is noted that claim 10 refers to at least two different refractory materials: the silica and the material of the lining; it could also refer to the material which is lined by the material. And it is further confusing as to

Art Unit: 1731

whether the layer is the same thing as the lining of claim 10. The specification indicates the lining and the barrier layer are the same thing.

Claim 11 and 13 are confusing because claim 11 refers to “the” material (which implies inherency – but claim 13 refers to “a” material which implies no inherency.

Claim 16: there is confusing antecedent basis for “gas feed inlet”.

Claims 11, 14-16 are confusing in their use of “walls”. The only specific discussion of “walls” pertain to 117 of applicant’s figure 2. But the drawing only shows one wall 117. Moreover, page 8, lines 20-22 states that the gas flows to space 123 between cup 113 and walls 117 – but 123 is not between 113 and 117, rather it is between 117 and insulation 129.

Claim Objections

Claims 10 and 11 are objected to because of the following informalities: Claim 10 lacks proper indents.

From MPEP 608.01 Form of Claims

Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation, 37 CFR 1.75(i).

There may be plural indentations to further segregate subcombinations or related steps.

Appropriate correction is required. As indicated above, it is unclear what has a drawing zone. Proper indents/ further indents should show what structure has the drawing zone.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 10-12 and 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Palmquist 4430109.

In order to examine the claims, Examiner first interprets independent claim 10, by giving the terms thereof the broadest reasonable interpretation in their ordinary usage in context as they would be understood by one of ordinary skill in the art in light of the written description in the specification, including the drawings, unless another meaning is intended by appellants as established in the written description of the specification, and without reading into the claims any limitation or particular embodiment disclosed in the specification. See, e.g., *In re Am. Acad. Of Sci. Tech. Ctr*, 267 F.3d 1359, 1364, 70 USPQ2d 1 827, 1830 (Fed. Cir. 2004); *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989). As illustrated by specification Fig. 1, the plain language of claim 1 specifies a furnace (of any size and any shape), comprising: at least a body of any size and shape which comprises at least a melting zone of any size and shape which comprises at least a wall of any size or shape with a protective lining of Re, Os, and/or Ir.

Art Unit: 1731

It is noted applicant's drawing zone 28 has no drawing occurring within it, rather it occurs significantly below it. It is also noted that the term "zone" does not represent any structure. Rather it is an area. To examiner the only way that one can reasonably construe the melt area 28 to be a part of a "drawing zone" is by making an extremely large zone. For example, an entire glass factory can be considered a "drawing zone" because drawing occurs within it. The same applies to a melting zone. In other words: the broadest reasonable interpretation for the terms "drawing zone" and "melting zones" are merely any areas/zones in which drawing and melting can occur. It is noted that drawing and melting are intended use limitations. Whether one uses the Palmquist furnace for melting and drawing is merely a choice of use by the inventor and carries very little weight when addressing the structure of the present apparatus claims.

A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Looking to Palmquist's figure 1: 30 is the wall with a protective lining of one of the claimed metals (see col. 4, lines 49-54). 112 and/or 63 are gas inlets, or at least gas lines that would inherently have inlets.

Art Unit: 1731

To summarize, the broadest reasonable interpretation of claims 10 requires substantially only a furnace which can melt silica, a wall with a protective lining, and a gas feed inlet.

Claims 11-12 are met because the lining is also inherently a barrier layer.

Claim 14 requires the barrier layer to provide a sealed chamber except for the gas feed inlet. Looking to applicant figure 1, there is at least two inlets for introducing gas – see 58 and 24. The claim (when interpreted in light of the specification) is interpreted as permitting the sealed chamber to be unsealed in other locations, beyond just the inlet. Still further, it is noted that applicant's figure 1 is NOT sealed by the lining at the top or at the bottom: additional objects/material serve to seal. Thus the claim does not require all sealing be performed by the lining. It is clear that the sidewalls of the Palmquist provides a seal chamber (in combination with other features – just like applicant's invention).

Claim 15: layer 30 is separated from wall 12 and wall 27.

Claim 16 See figure 3 of Palmquist. 32 is the space, 9 and 19 are inlets that would serve as conduits to the space – at least when the furnace is empty. 14 is one wall, and 24 comprises the second of the plurality of “walls” – other structures also could be considered to be a wall.

Claim Rejections - 35 USC § 103

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Art Unit: 1731

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Palmquist 4430109 as applied to claim 10 above, and further in view of Bhatti 4404009 and Siefert 2777254.

Claim 13 also requires the wall to have molybdenum or tungsten. Palmquist does not teach this metal in combination with Re, Ir or Os. Palmquist does acknowledge that moly has problems with it (col. 2, lines 49-52; col. 3, lines 3-10; and col. 4, lines 51-54) namely, it can oxidize. Siefert discloses that platinum alloys are a good refractory material in glass making, but that it is soft, heavy and expensive. Siefert teaches to apply a coating of platinum alloys to stiffer refractories – to take advantage of the corrosion resistance of the alloy, and the stiffness of the other refractory. Bhatti teaches to combine the high strength characteristics of Moly and tungsten with the oxidation resistance of precious metal alloys – including Ir and Os (col. 1, lines 26-35 and claim 3)

It would have been obvious to coat the Palmquist moly wall with a metal comprising Ir or Os for reasons given in the prior art – most notably corrosion resistance, oxidation resistance and high strength.

Alternatively and/or additionally, it would have been obvious to try the claimed combination. The prior art references recognizes 1) precious metal type layers/walls, 2) less expensive stronger layers/walls but with oxidation problems and 3) those conventional refractories which tend to be corroded by the glass. It would have been obvious to try the Bhatti composite solution to solve the Palmquist problem.

Art Unit: 1731

Alternatively, it would have been obvious to try the advantageous refractory materials in combination layers – in particular to try a oxidation protective layer around the stronger W or Mo layer.

As indicated by the Supreme Court in KSR vs. Teleflex:

When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. In that instance the fact that a combination was obvious to try might show that it was obvious under §103.

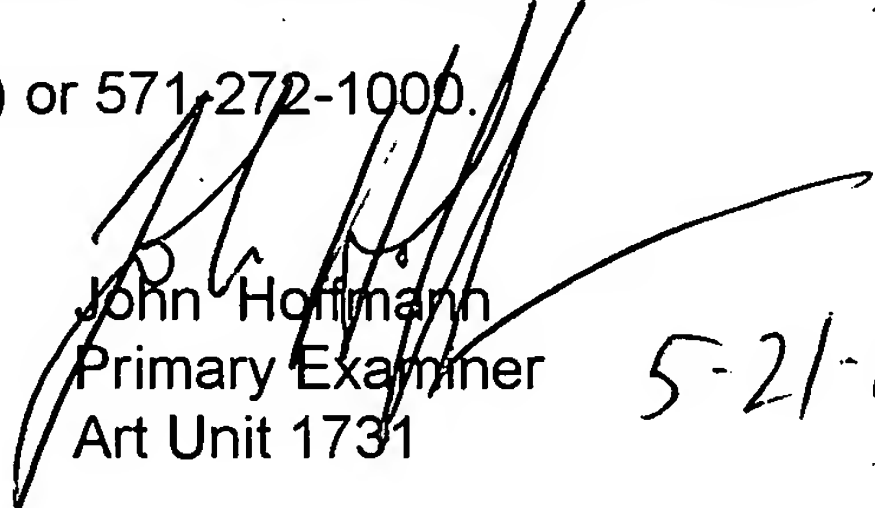
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1731

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


John Hoffmann
Primary Examiner
Art Unit 1731

5-21-07

jmh